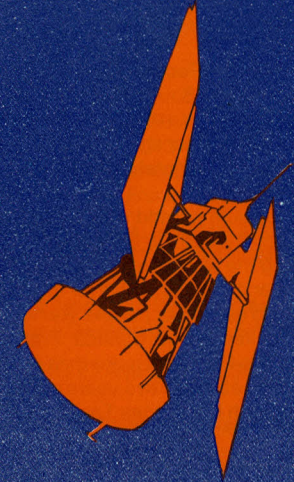


# FINAL ADVANCE PROGRAM



## The 1st Annual William T. Pecora Memorial Symposium

**Emphasis Topic:**  
**Applications of Remote Sensing  
to Mineral and Mineral  
Fuel Exploration**

**October 28-31, 1975  
Holiday Inn  
Sioux Falls, South Dakota**



**"FROM THE EARTH A BETTER LIFE..."**


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President

American Mining Congress  
1100 Ring Building, Washington, D.C. 20036  
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Sponsored by  
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The Association of American Geographers  
The Geological Society of America  
Society of Economic Geologists





The 1st Annual William T. Pecora Memorial Symposium scheduled for Sioux Falls, South Dakota, October 28-31, 1975, will foster the exchange of multi-disciplinary scientific and management findings resulting from the use of remotely sensed data.

The four-day symposium will address itself to new and revolutionary discoveries which assist the earth scientist in meeting the world's obligation to produce the minerals, fiber and food essential for the security and continuing progress of our people. Remote sensing experts from the United States, Canada, France, Mexico and South America will present more than 30 technical papers covering the results of two years of LANDSAT (formerly ERTS—Earth Resources Technology Satellite) productivity.

#### **EARTH RESOURCES OBSERVATION SYSTEMS DATA CENTER TOURS**

Featured during the Symposium will be specialized tours of the EROS Data Center geared to the interest of each attendee. The tours through the modern Data Center will feature user services' operations, applications assistance and training facilities, high volume photographic laboratories and equipment, and the central computer complex. Highlighting the tours will be a visit to the unique Data Analysis Laboratory. Demonstrations of interactive digital and analog image analysis equipment will be conducted to illustrate techniques for locating mineralized zones using satellite images. Applications scientists will be available to answer questions on specific image analysis techniques and equipment capabilities.

Shuttle buses will depart the Holiday Inn (Downtown) at 30-minute intervals on Tuesday, October 28 and Friday, October 31. Specific schedules will be listed in the program given to the attendee at registration.

#### **TUESDAY AFTERNOON**

Tours of the EROS Data Center. Shuttle buses will depart the Holiday Inn at short intervals throughout the afternoon. Visitors will be given specialized tours in small groups showing applications of the equipment and services within the Data Center.

#### **WEDNESDAY MORNING**

Welcoming Address: The Honorable Richard F. Kneip, Governor of the State of South Dakota

Opening Remarks: The Honorable V.E. McKelvey, Director, U.S. Geological Survey, Reston, VA

#### **INTERNATIONAL IMPLICATIONS OF LANDSAT DATA FROM A GEOLOGICAL VIEWPOINT**

Dr. John Reinemund, *Chief*, Office of International Geology, U.S. Geological Survey, Reston, VA

#### **NASA PLANS FOR FUTURE EARTH RESOURCE MISSIONS**

Dr. William Nordberg,  
*Director of Applications*, NASA / Goddard Space Flight Center, Greenbelt, MD

#### **APPLICATION OF REMOTE SENSING (LANDSAT DATA) TO PETROLEUM EXPLORATION**

Michel T. Halbouty, *Consulting Geologist and Petroleum Engineer*, Houston

#### **LANDSAT APPLICATIONS TO RESOURCE EXPLORATION AND GASLINE PLANNING**

Dr. Carlos Brockmann, *Director*, Programa ERTS/ Bolivia, GEOBOL Servicio Geologico de Bolivia, La Paz, Bolivia, South America

#### **WEDNESDAY AFTERNOON**

#### **AN OVERVIEW OF CANADIAN PROGRESS IN THE USES OF LANDSAT DATA IN GEOLOGY**

Co-authors: Dr. L.W. Morley, *Director*, Canadian Centre for Remote Sensing, Ottawa, Ontario, Canada and  
Dr. A. F. Gregory, *President*, Gregory Geoscience Ltd., Ottawa, Ontario, Canada

#### **MAPPING AND CHARTING FROM LANDSAT**

Dr. A. P. Colvocoresses, *Cartography Coordinator*, EROS Program, U.S. Geological Survey, Reston, VA

#### **RELATIONSHIP OF MINERAL RESOURCES TO LINEAR FEATURES IN MEXICO AS DETERMINED FROM LANDSAT DATA**

Ing. Guillermo P. Salas, *Director General*, Consejo de Recursos Naturales no Renovables, Mexico City, Mexico

#### **USES OF LANDSAT AND OTHER REMOTE SENSOR SYSTEMS TO ADDRESS ENERGY, MINERALS, AND RELATED ENVIRONMENTAL PROBLEMS**

Dr. John M. DeNoyer, *Director*, EROS Program, U.S. Geological Survey, Reston, VA

#### **THURSDAY MORNING**

#### **LANDSAT CONTRIBUTIONS TO STUDIES OF PLATE TECTONICS**

Dr. Jan Kutina, *Consulting Geologist*, Bethlehem Steel Corporation, Bethlehem, PA



MACHINE PROCESSING OF LANDSAT DATA IN THE  
SEARCH FOR ALTERATION HALOS

Co-authors: Dr. Lawrence C. Rowan, *Geologist*,  
U. S. Geological Survey, Reston, VA and  
Alexander F. H. Goetz, Jet Propulsion Laboratory and  
Roger P. Ashley, U. S. Geological Survey,  
Menlo Park, CA

LANDSAT DATA CONTRIBUTIONS TO EXPLORATION  
OF FOREIGN REGIONS

Co-authors: Seth I. Gutman, *Geophysicist*  
and  
Dr. F. P. Bentz, *Chief Geologist*, Santa Fe Minerals,  
Inc., Orange, CA

LANDSAT AND OTHER REMOTE SENSING  
TECHNIQUES APPLIED TO INVESTIGATION OF  
VEGETATED GEOCHEMICAL ANOMALIES

Co-authors: Dr. Frank Canney, *Geologist*, U. S.  
Geological Survey, Denver and Gary L. Raines,  
*Research Associate*, U. S. Geological Survey,  
Denver

LUMINESCENCE AS AN INDICATOR OF  
GEOCHEMICAL ANOMALIES

Co-authors: William R. Hemphill, *Acting Assistant  
Program Manager*, EROS Program, U. S. Geological  
Survey, Reston, VA and Robert D. Watson, *Physicist*,  
U.S. Geological Survey, Flagstaff, AZ

USE OF LANDSAT DATA FOR ENGINEERING  
GEOLOGIC APPLICATIONS IN NORTH CENTRAL IRAN

Dr. Daniel B. Krinsley, *Chief*, Environmental Impact  
Analysis Program, U.S. Geological Survey, Reston,  
VA

FUTURE SENSOR TECHNOLOGY FOR GEOLOGIC  
AND RELATED MISSIONS

Marvin S. Maxwell, *Head*, Systems and Missions  
Analysis Branch, NASA/Goddard Space Flight  
Center, Greenbelt, MD

ENVIRONMENTAL EVALUATION AND SITE STUDIES  
USING LANDSAT DATA

Leo Eichen, *Manager*, Remote Sensing Technology  
Group, Dames & Moore, Cranford, NJ

LANDSAT DATA CONTRIBUTIONS TO PROJECT  
'BIRDDOG'

Terrence J. Donovan, *Geologist*, Branch of Oil and  
Gas Resources, U.S. Geological Survey, Denver

THURSDAY AFTERNOON

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LANDSAT IMAGE STUDIES AS APPLIED TO  
PETROLEUM EXPLORATION IN KENYA

John B. Miller, *Staff Geologist*, Chevron Overseas  
Petroleum, Inc., San Francisco

REGIONAL LINEAR ANALYSIS AS A GUIDE TO  
MINERAL RESOURCE EXPLORATION—USING  
LANDSAT (ERTS) DATA

Dr. Robert A. Hodgson, *Research Associate*, Gulf  
Research and Development Co., Pittsburgh

SOME SPECIFIC EXAMPLES OF SPACE IMAGERY  
PROSPECTS

Robert Worthing, *Chief Geologist*, The Reserve  
Petroleum Co., Oklahoma City

TECTONIC DEDUCTIONS FROM ALASKAN SPACE  
IMAGERY

Co-authors: E. H. Lathram, EROS, Pacific Coast/  
Alaska, U. S. Geological Survey, Menlo Park, CA and  
Robert G. H. Raynolds, Department of Applied Earth  
Sciences, Stanford University, Stanford, CA

COMPUTER-ENHANCED LANDSAT DATA AS A  
MINERAL EXPLORATION TOOL IN ALASKA

Co-authors: Nairn R. D. Albert, *Geologist*, U.S.  
Geological Survey, Menlo Park, CA and  
Pat S. Chavez, *Mathematician*, U.S. Geological  
Survey, Flagstaff, AZ

EVALUATION OF IMPROVED DIGITAL PROCESSING  
TECHNIQUES OF LANDSAT DATA FOR SULFIDE  
MINERAL PROSPECTING

Co-authors: Robert Gordon Schmidt, *Geologist*,  
U.S. Geological Survey, Reston, VA and  
Ralph Bernstein, *Senior Engineer*, IBM, Gaithersburg,  
MD

FRIDAY MORNING

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A DEEPER LOOK AT LANDSAT IMAGES OF UMIAT,  
ALASKA

Co-authors: A. F. Maurin, *Head*, Research Depart-  
ment of Morphology and Mathematical Sedimentology,  
Compagnie Francaise Des Petroles, Paris, France,  
and E. H. Lathram, EROS, Pacific Coast/Alaska,  
U. S. Geological Survey, Menlo Park, CA

WHY REMOTE SENSING? A MANAGEMENT VIEW  
J. Robert Porter, *President*, Earth Satellite  
Corporation, Chevy Chase, MD

REGIONAL AND GLOBAL GEOLOGICAL STUDIES  
USING SATELLITE MAGNETOMETER DATA

Robert D. Regan, Ph.D., *Geophysicist*, U.S. Geological  
Survey, Reston, VA



#### AIRTRACE—AN AIRBORNE GEOCHEMICAL EXPLORATION TECHNIQUE

Dr. Anthony R. Barringer, *President*, Barringer Research, Ltd., Rexdale, Ontario, Canada

#### AN APPLICATION OF SATELLITE IMAGERY TO MINERAL EXPLORATION

Co-authors: Mark Liggett, *Research Geologist*, and John F. Childs, *Research Geologist*, Cyprus Georesearch Co., Los Angeles

#### MINERAL EXPLORATION APPLICATIONS OF DIGITALLY PROCESSED LANDSAT IMAGERY

Prof. Ronald J. P. Lyon, *Director*, Remote Sensing Laboratory, Stanford University, Palo Alto, CA

#### OPTIMUM SLAR SYSTEM PARAMETERS FOR REVELATION OF GEOLOGIC DATA

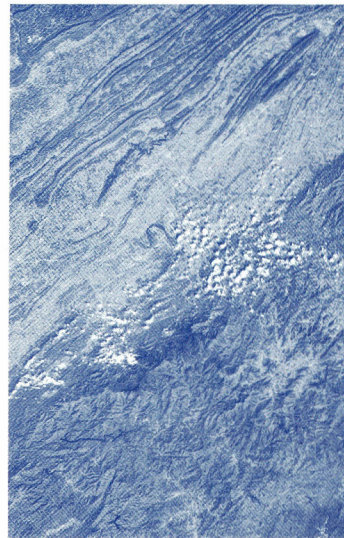
Co-authors: Louis F. Dellwig, *Director*, Remote Sensing Laboratory and Richard K. Moore, Space Technology Center, Lawrence, Kansas

#### WORLD WIDE INDEXING AND RETRIEVAL OF LANDSAT IMAGES

Dr. Floyd Sabins, *Senior Research Associate*, Chevron Oil Field Research Co., La Habra, CA

#### FRIDAY AFTERNOON

Tours of the EROS Data Center for those who did not visit on Tuesday or who wish to return. Shuttle buses will depart the Holiday Inn at short intervals throughout the afternoon.



This photo shows a segment of The Appalachian Mountains in Tennessee. It was taken from an altitude of approximately 570 miles by ERTS

#### SPECIAL EVENTS

Early Bird Reception, Tuesday, October 28



Luncheon, Wednesday, October 29  
Speaker: **The Honorable Frank E. Moss**  
U. S. Senator from Utah



Luncheon, Thursday, October 30  
Speaker: **Mr. Russell L. Schweickart**  
Director, User Affairs, Office of Applications, NASA



Reception and Banquet, Thursday, October 30  
Speaker: **The Honorable Pete V. Domenici**  
U. S. Senator from New Mexico

#### REGISTRATION

The Symposium Registration Fee is \$75.00 per person. (A receipt setting forth the registration fee and meal function costs will be issued upon request). The fee covers all technical sessions, the Early Bird Reception, all shuttle bus transportation, the Wednesday and Thursday Luncheons and Thursday Banquet.

Smooth your registration by filling in the enclosed registration form and mail it (with your check) to the American Mining Congress, 1100 Ring Building, Washington, D. C. 20036. Advance registrations will be accepted until October 17. After this date, attendees may register for the symposium in the hotel lobby of the Holiday Inn (Downtown) beginning October 28.

All advance registration material will be held in Sioux Falls and may be secured upon your arrival.

#### HOTEL RESERVATIONS

Make your hotel reservations today; an application form is enclosed. All reservations will be handled by the Symposium Housing Bureau, Sioux Falls Chamber of Commerce, 101 West 9th St., Sioux Falls, SD 57101. Confirmations will be sent by the hotel direct to the attendee.

Hotel and meeting space in Sioux Falls is limited; therefore consider making your hotel reservation early.